AF/ RW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Jong-hoon LEE, et al.

Serial No. 10/645,868 Group Art Unit: 2627

Confirmation No. 8642

Filed: August 22, 2003 Examiner: Christopher Ray Lamb

For: METHOD OF CONTROLLING RECORDING OPERATION FOR OPTICAL DISC RECORDING APPARATUS

APPLICANT APPEAL BRIEF UNDER 37 C.F.R. §41.37

Mail Stop Appeal Brief-Patents
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

In a Notice of Appeal filed March 2, 2009, the Applicants appeal from the Examiner's Final Office Action mailed October 30, 2008 finally rejecting claims 1-8, 10-13, 15-16 and 18-19. In a Notice of Panel Decision from Pre-Appeal Brief Review, the Examiner indicated that a Pre-Appeal Brief conference was held, but the application remains under appeal. The Notice was mailed August 31, 2009 and set a one-month response period, ending September 30, 2009. Submitted herewith is an Applicant Appeal Brief under 37 CFR 41.37, and the requisite fees set forth in 37 C.F.R. §41.20(b)(2).

If any further fees are required in connection with this filing, please charge our Deposit Account No. 19-3935.

10/01/2009 SZEWDIE1 00000014 10645868
01 FC:1402 540.00 OP

I. REAL PARTY IN INTEREST

The real party in interest is Samsung Electronics Co., Ltd., Suwon City, Korea, the assignee of the present above-identified pending US patent application.

II. RELATED APPEALS AND INTERFERENCES

Appellants, Appellants' legal representative, and the assignee do no know of any prior or pending appeals, interferences or judicial proceedings, which may be related to, directly affect or be directly affected by, or have a bearing on, the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1-8, 10-13, 15-16 and 18-19 are pending and under consideration.

Claims 9, 14 and 17 are cancelled.

Claims 1-8, 10-13, 15-16 and 18-19 are rejected.

Claims 1-8, 10-13, 15-16 and 18-19 are under appeal.

IV. STATUS OF AMENDMENTS

Appellants filed a response dated June 24, 2008 in response to a non-final Office Action. In response, the Examiner issued a final Office Action dated October 30, 2008. The Appellants on December 30, 2008 filed an Amendment After Final Rejection under 37 CFR 1.116. The Advisory Action mailed January 26, 2009 indicated that the proposed amendments filed December 30, 2008 would not be entered.

Therefore, the claims are in the form as presented in the July 24, 2008 response.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The independent claims being appealed are 1, 5, 8, 12-13 and 16.

A. Independent claim 1

1. (CURRENTLY AMENDED) A method of controlling a recording operation

Support: See, for example, the present application, paragraphs 38-50; FIG. 5.

of an optical disc recording apparatus which records data to a recordable optical disc (600) having a defect, the method comprising:

Support: See, for example, the present application, paragraphs 51-55; FIG. 6.

based on a length of the defect, classifying (S500) the defect into a first category indicating that the data is normally recordable

Support: See, for example, the present application, paragraph 40; FIGS. 7A-7B.

and a second category indicating that the data is not normally reproducible even though the data is normally recordable;

Support: See, for example, the present application, paragraph 41; FIGS. 7C-7D.

detecting the defect (S502) while recording the data to the recordable optical disc; if the defect is detected, continuing recording of the data (S504) in the recordable disc while controlling a servo unit to hold a servo tracking by using a previous servo control value which is used before the defect occurs;

Support: See, for example, the present application, paragraph 45; FIG. 5.

determining the length of the defect and a type of the defect based on the length of the defect (S506); and

Support: See, for example, the present application paragraph 52; FIG. 5.

as a result of the determining, if the defect corresponds to the first category, assuming that the data is normally recorded in a defect region and continuing recording of the data, or if the defect corresponds to the second category, further recording of the data recorded in the defect region in another region without a read-after-write operation (S508),

Support: See, for example, the present application paragraph 55; FIG. 5

the classifying comprising comparing the length of the defect with first and second times determined according to a recording speed of the optical disc.

Support: See, for example, the present application paragraph 39; FIG. 5

Independent claim 1 is a method claim. See, for example, the present application paragraphs 38-50; FIG. 5. The summary of the claimed subject matter for claim 1 is as follows.

Independent claim 1 recites a method of controlling a recording operation of an optical disc recording apparatus which records data to a recordable optical disc (600) having a defect. See, for example, the present application paragraphs 51-55; FIG. 6.

The method also includes based on a length of the defect, classifying the defect into a first category indicating that the data is normally recordable. See, for example, the present application paragraph 40; FIGS. 7A-7B.

The method also includes a second category indicating that the data is not normally reproducible even though the data is normally recordable. See, for example, the present application paragraph 41; FIGS. 7C-7D.

The method also includes detecting the defect (S502) while recording the data to the recordable optical disc; if the defect is detected, continuing recording of the data (S504) in the recordable disc while controlling a servo unit to hold a servo tracking by using a previous servo control value which is used before the defect occurs. See, for example, the present application paragraph 45; FIG. 5.

The method also includes determining the length of the defect and a type of the defect based on the length of the defect. See, for example, the present application paragraph 52; FIG. 5.

The method also includes as a result of the determining, if the defect corresponds to the first category, assuming that the data is normally recorded in a defect region and continuing recording of the data, or if the defect corresponds to the second category, further recording of the data recorded in the defect region in another region without a read-after-write operation (S508). See, for example, the present application paragraph 55; FIG. 5.

Finally, claim 1 also recites the classifying comprising comparing the length of the defect with first and second times determined according to a recording speed of the optical disc. See, for example, the present application paragraph 39; FIG. 5.

B. Independent claim 5

5. (PREVIOUSLY PRESENTED) A method of controlling a recording operation

Support: See, for example, the present application paragraphs 38-50; FIG. 5.

of an optical disc recording apparatus which records data to a recordable optical disc having a defective region, comprising:

Support: See, for example, the present application paragraphs 51-55; FIG. 6.

detecting the defective region of the recordable optical disc (S502); determining a length of the defective region, while recording the data to the recordable optical disc (S506); controlling a servo unit based on a value of a servo control just prior to a detection of the defective region if recording the data to the defective region;

Support: See, for example, the present application paragraph 45; FIG. 5.

classifying (S500) the defective region into a first category in which the data is recordable in the defective region and into a second category in which the data is not reproducible from the defective region even though the data is recordable therein, according to the length of the defective region; and

Support: See, for example, the present application paragraph 41; FIGS. 7C-7D.

if a classified result is in the first category, recording the data in the defective region or if the classified result is in the second category, recording the data in a second region of the optical recordable disc without a read-after-write operation (S508),

Support: See, for example, the present application paragraph 55; FIG. 5.

the classifying comprising comparing the length of the defective region with first and second times determined according to a specification to the servo unit.

Support: See, for example, the present application paragraph 39; FIG. 5.

Independent claim 5 is a method claim. See, for example, the present application paragraphs 38-50; FIG. 5. The summary of the claimed subject matter for claim 5 is as follows.

Independent claim 5 recites a method of controlling a recording operation. See, for example, the present application paragraphs 38-50; FIG. 5.

Independent claim 5 recites a method of an optical disc recording apparatus which records data to a recordable optical disc having a defective region, comprising. See, for example, the present application paragraphs 51-55; FIG. 6.

The method also includes detecting the defective region of the recordable optical disc (S502); determining a length of the defective region, while recording the data to the recordable optical disc (S506); controlling a servo unit based on a value of a servo control just prior to a detection of the defective region if recording the data to the defective region. See, for example, the present application paragraph 45; FIG. 5.

The method also includes classifying (S500) the defective region into a first category in which the data is recordable in the defective region and into a second category in which the data is not reproducible from the defective region even though the data is recordable therein, according to the length of the defective region. See, for example, the present application paragraph 41; FIGS. 7C-7D.

The method also includes if a classified result is in the first category, recording the data in the defective region or if the classified result is in the second category, recording the data in a second region of the optical recordable disc without a read-after-write operation (S508). See, for example, the present application paragraph 55; FIG. 5.

Finally, claim 5 also recites the classifying comprising comparing the length of the defective region with first and second times determined according to a specification to the servo unit. See, for example, the present application paragraph 39; FIG. 5.

C. Independent claim 8

8. (PREVIOUSLY PRESENTED) An optical disc recording apparatus which records data to a recordable optical disc (600) having a defect, comprising:

Support: See, for example, the present application paragraphs 51-55; FIG. 6.

an optical pickup (604) generating a reproduction signal;:

Support: See, for example, the present application paragraphs 51-55; FIG. 6.

one or more servos to move the optical pickup;

Support: See, for example, the present application paragraphs 51 and 5.

a processing unit (614) to detect a servo error signal from the reproduction signal and to control the one or more servos according to the reproduction signal;

Support: See, for example, the present application paragraphs 51 and 6; FIG. 6.

a defect detection unit (608) to detect a defect on the optical disc and to generate a defect detection signal when the defect is detected; and

Support: See, for example, the present application paragraphs 51 and 6; FIG. 6.

a defect type determination unit (620) to determine, without a read-after-write operation, a type of the defect with reference to the defect detection signal provided from the defect detection unit based on a length of a defective region of the defect,

Support: See, for example, the present application paragraph 52; FIG. 6.

wherein the type of the defect is determined by the defect type determination unit based on whether the data is recordable in the defective region or the data is not reproducible from defective region even though the data is recordable therein,

Support: See, for example, the present application paragraph 53; FIGS. 7A-7D.

the defect type determination unit determining the type of the defective region by comparing the length of the defective region with first and second times determined according to a recording speed of the optical disc.

Support: See, for example, the present application paragraph 39; FIG. 5.

Independent claim 8 is an apparatus claim. This claim recites an optical disc recording apparatus which records data to a recordable optical disc (600) having a defect, comprising. See, for example, the present application paragraphs 51-55; FIG. 6.

Independent claim 8 recites an optical disc includes an optical pickup (604) generating a reproduction signal. See, for example, the present application paragraphs 51-55; FIG. 6.

The optical disc recording apparatus also includes one or more servos to move the optical pickup. See, for example, the present application paragraphs 51 and 5.

The optical disc recording apparatus also includes a processing unit (614) to detect a servo error signal from the reproduction signal and to control the one or more servos according to the reproduction signal. See, for example, the present application paragraphs 51 and 6; FIG. 6.

The optical disc recording apparatus also includes a defect detection unit (608) to detect a defect on the optical disc and to generate a defect detection signal when the defect is detected. See, for example, the present application paragraphs 51 and 6; FIG. 6.

The optical disc recording apparatus also includes a defect type determination unit (620) to determine, without a read-after-write operation, a type of the defect with reference to the defect detection signal provided from the defect detection unit based on a length of a defective region of the defect. See, for example, the present application paragraph 52; FIG. 6.

The claim also recites the type of the defect is determined by the defect type determination unit based on whether the data is recordable in the defective region or the data is not reproducible from defective region even though the data is recordable therein. See, for example, the present application paragraph 53; FIGS. 7A-7D.

Finally, claim 8 also recites the defect type determination unit determining the type of the defective region by comparing the length of the defective region with first and second times determined according to a recording speed of the optical disc. See, for example, the present application paragraph 39; FIG. 5.

D. Independent claim 12

12. (PREVIOUSLY PRESENTED) A computer readable medium embodying a program executed by a processor (412) to record data to a recordable optical disc (600) having a defective region comprising: detecting the defective region of the recordable optical disc (S502); determining a length of the defective region, while recording the data to the recordable optical disc (S506); controlling a servo unit based on a value of a servo control just prior to a detection of the defective region if recording the data to the defective region;

Support: See, for example, the present application paragraph 45; FIG. 5.

classifying (S500) the defective region into a first and category in which the data is recordable in the defective region and a second category in which the data is not reproducible from the defective region even though the data is recordable therein, according to a length of the defective region; and

Support: **See, for example,** the present application paragraph 41; FIGS. 7C-7D.

if the classified result is in the first category, recording the data in the defective region or if the classified result is in the second category, recording the data in a second region of the optical recordable disc without a read-after-write operation (S508),

Support: See, for example, the present application paragraph 55; FIG. 5.

the classifying comprising comparing the length of the defective region with first and second times determined according to a recording speed of the optical disc.

Support: See, for example, the present application paragraph 39; FIG. 5.

Independent claim 12 recites a computer readable medium embodying a program executed by a processor (412) to record data to a recordable optical disc (600) having a defective region comprising: detecting the defective region of the recordable optical disc (S502); determining a length of the defective region, while recording the data to the recordable optical disc (S506); controlling a servo unit based on a value of a servo control just prior to a detection of the defective region if recording the data to the defective region. See, for example, the present application paragraph 45; FIG. 5.

Independent claim 12 recites classifying (S500) the defective region into a first and category in which the data is recordable in the defective region and a second category in which the data is not reproducible from the defective region even though the data is recordable therein, according to a length of the defective region. See, for example, the present application paragraph 41; FIGS. 7C-7D.

The claim also recites if the classified result is in the first category, recording the data in the defective region or if the classified result is in the second category, recording the data in a second region of the optical recordable disc without a read-after-write operation (S508). See, for example, the present application paragraph 55; FIG. 5.

Finally, claim 12 also recites the classifying comprising comparing the length of the defective region with first and second times determined according to a recording speed of the optical disc. See, for example, the present application paragraph 39; FIG. 5.

E. Independent claim 13

13. (PREVIOUSLY PRESENTED) A method of controlling a recording operation

Support: See, for example, the present application paragraphs 38-50; FIG. 5.

of an optical disc recording apparatus which records data to a recordable optical disc having a defective region,

Support: **See, for example,** the present application paragraphs 51-55; FIG. 6.

the method comprising: detecting the defective region of the recordable optical disc (S502); determining a length of the defective region, while recording the data to the recordable optical disc (S506); controlling a servo unit based on a value of a servo control just prior to a detection of the defective region, if recording the data to the defective region;

Support: **See, for example,** the present application paragraph 45; FIG. 5.

classifying (S500) the defective region into a first category, if the length of the defective region is less than a first reference length and into a second category, if the length of the defective region is between the first reference length and a second reference length; and

Support: **See, for example,** the present application paragraph 41; FIGS. 7C-7D.

if a classified result is in the first category, recording the data in the defective region or if the classified result is in the second category, recording the data in a second region of the optical recordable disc without a read-after-write operation (S508),

Support: **See, for example,** the present application paragraph 55; FIG. 5.

wherein the first reference length is a maximum length of the defective region where a servo status is stable and data is readable without any additional operation of the optical disc recording apparatus after data is recorded,

Support: **See, for example,** the present application paragraph 40; FIGS. 7A-7B.

the classifying comprising comparing the length of the defective region with first and second times determined according to a recording speed of the optical disc.

Support: **See, for example,** the present application paragraph 39; FIG. 5.

Independent claim 13 is a method of controlling a recording operation. See, for example, the present application paragraphs 38-50; FIG. 5.

Independent claim 13 recites of an optical disc recording apparatus which records data to a recordable optical disc having a defective region. See, for example, the present application paragraphs 51-55; FIGS. 6.

The method also includes detecting the defective region of the recordable optical disc (S502); determining a length of the defective region, while recording the data to the recordable optical disc (S506); controlling a servo unit based on a value of a servo control just prior to a detection of the defective region, if recording the data to the defective region. See, for example, the present application paragraph 45; FIG. 5.

The method also includes classifying (S500) the defective region into a first category, if the length of the defective region is less than a first reference length and into a second category, if the length of the defective region is between the first reference length and a second reference length. See, for example, the present application paragraph 41; FIGS. 7C-7D.

The method also includes if a classified result is in the first category, recording the data in the defective region or if the classified result is in the second category, recording the data in a second region of the optical recordable disc without a read-after-write operation (S508). See, for example, the present application paragraph 55; FIG. 5.

The method also includes wherein the first reference length is a maximum length of the defective region where a servo status is stable and data is readable without any additional operation of the optical disc recording apparatus after data is recorded. See, for example, the present application paragraph 40; FIGS. 7A-7B.

Finally, claim 13 also recites the classifying comprising comparing the length of the defective region with first and second times determined according to a recording speed of the optical disc. See, for example, the present application paragraph 39; FIG. 5.

F. Independent claim 16

16. (PREVIOUSLY PRESENTED) An optical disc recording apparatus which records data to a recordable optical disc (600) having a defect, comprising:

Support: See, for example, the present application paragraphs 51-55; FIG. 6.

an optical pickup (604) generating a reproduction signal;

Support: **See, for example,** the present application paragraphs 51-55; FIG. 6.

one or more servos to move the optical pickup;

Support: **See, for example,** the present application paragraphs 51 and 5.

a processing unit (614) to detect a servo error signal from the reproduction signal and to control the one or more servos according to the reproduction signal;

Support: **See, for example,** the present application paragraphs 51 and 5; FIG. 6.

a defect detection unit to detect a defect on the optical disc and to generate a defect detection signal when the defect is detected; and

Support: **See, for example,** the present application paragraphs 51 and 6; FIG. 6.

a defect type determination unit (620) to determine a type of the defect with reference to the defect detection signal provided from the defect detection unit based on whether a length of the defective region is greater than a reference length,

Support: **See, for example,** the present application paragraph 52; FIG. 6.

wherein the reference length is a maximum length of the defective region where a servo status is stable and data is readable without an additional operation of the optical disc recording apparatus after data is recorded, and if the defective region is longer than the reference length;

Support: **See, for example,** the present application paragraph 40; FIGS. 7A-7B.

recording the data in another region of the recordable optical disc without a read-after-write operation (S507),

Support: **See, for example,** the present application paragraph 55; FIG. 5.

the classifying comprising comparing the length of the defective region with first and second times determined according to a recording speed of the optical disc.

Support: **See, for example,** the present application paragraph 39; FIG. 5.

Independent claim 16 is an optical disc recording apparatus which records data to a recordable optical disc (600) having a defect. See, for example, the present application paragraphs 51-55; FIG. 6.

Independent claim 16 recites an optical pickup (604) generating a reproduction signal. See, for example, the present application paragraphs 51-55; FIG. 6.

The optical disc recording apparatus includes one or more servos to move the optical pickup. See, for example, the present application paragraphs 51 and 5.

The optical disc recording apparatus also includes a processing unit (614) to detect a servo error signal from the reproduction signal and to control the one or more servos according to the reproduction signal. See, for example, the present application paragraphs 51 and 5; FIG. 6.

The optical disc recording apparatus also includes a defect detection unit to detect a defect on the optical disc and to generate a defect detection signal when the defect is detected. See, for example, the present application paragraphs 51 and 6; FIG. 6.

The optical disc recording apparatus also includes a defect type determination unit (620) to determine a type of the defect with reference to the defect detection signal provided from the defect detection unit based on whether a length of the defective region is greater than a reference length. See, for example, the present application paragraph 52; FIG. 6.

The claim also recites the reference length is a maximum length of the defective region where a servo status is stable and data is readable with out an additional operation of the optical disc recording apparatus after data is recorded, and if the defective region is longer than the reference length. See, for example, the present application paragraph 40; FIGS. 7A-7B.

The claim also recites recording the data in another region of the recordable optical disc without a read-after-write operation (S507). See, for example, the present application paragraph 55; FIG. 5.

Finally, claim 16 also recites the classifying comprising comparing the length of the defective region with first and second times determined according to a recording speed of the optical disc. See, for example, the present application paragraph 39; FIG. 5.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-8, 10-13, 15-18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takasago et al. (U.S. 4,830,290) in view of Kamiyama (U.S. 6,341,113) and further in view of Nakane et al. (U.S. 2002/0031069) and further in view of Kishimoto et al. (U.S. 6,714,493).

VII. ARGUMENTS

A. Review of the prior art

Takasago et al. (U.S. 4,830,290)

Takasago teaches a general optical recording/reproducing apparatus for recording information on tracks of an optical disc. Takasago, Abstract. This reference determines that off-track is detected at two stages according to the duration time of an off-track signal. Takasago, col. 3, ln. 30-31.

Kamiyama (U.S. 6,341,113)

Kamiyama generally relates to a servo device for controlling a reading operation, which generates a servo error signal that indicates an amount of deviation of a position of the pickup. Kamiyama, Abstract.

Nakane et al. (U.S.2002/0031069)

This reference teaches different criteria for detecting defects, depending on the type of data recorded on the disc. Nakane, Abstract.

Kishimoto et al. (U.S.6,714,493)

This reference generally relates to an optical disk apparatus, and teaches a plurality of different modes that have different rotation speeds of the optical disk. The selected mode is changed the next lower speed when the driving of the focusing actuator is detected to be in the abnormal state. Kishimoto, col. 11, ln. 57 to col. 12, ln. 7.

B. Independent claims 1, 8 and 16 claims 2-4, 10-11 and 18-19 depending therefrom

1. First claim feature

First, it is noted that independent claim 1 recites comparing the length of the defect with first and second times "determined according to a recording speed of the optical disc." The Office Action of October 30, 2008 (hereinafter "Office Action") indicates that the primary reference (Takasago) and secondary references (Kamiyama/Nakane) do not teach these features. Instead, the Office Action relies on Kishimoto. Specifically, the Office Action (page 5, lines 1-2) states "Kishimoto discloses that an optical disc apparatus may have a plurality of different speeds."

Although Kishimoto does teach a plurality of different speeds (i.e. 48x, 40x, etc.), this

reference does not teach comparing according to a recording speed of a disc. That is to say, a plurality of different speeds is not the same as the claimed feature, which is comparing of the length with the times being "determined according to a recording speed of the disc." Thus, even assuming, *arguendo*, that Kishimoto does teach a plurality of different speeds, Kishimoto still does not overcome the deficiencies in the remaining references. While Kishimoto may teach different speeds, the Office Action does not allege that Kishimoto teaches how to determine length and times according to the variable speed that is being used.

2. Second claim feature

Second, independent claim 1 recites determining a type of the defect based on the length of the defect. In contrast, the defect is classified according to the duration of the off-track signal in Takasago. Takasago, col. 3, ln. 30-31. A factor in this distinction is that Takasago is directed to detecting an external disturbance causing the off-track. Takasago, col. 3, ln. 4-6. In contrast, the present invention may be used to detect dirt, dust, scratches or disk manufacturing errors causing off track. Present paragraph 18. Takasago cannot classify errors caused by these factors. If time T_1 of Takasago is not exceeded, normal recording/reproducing is determined. Because the duration T_1 is determined so that an external disturbance may be detected, this time is too long to detect errors caused by dirt and dust.

3. Combination of References

Finally, it is respectfully submitted that the combination of references is not proper. To establish a *prima facie* case of obviousness, the following three criteria must be met: There must be some suggestion or motivation to combine the references; there must be a reasonable expectation of success; and the prior art references must teach or suggest all the claim limitations. MPEP 2143.

The Office Action indicates the Takasago/Kamiyama/Nakane combination does not teach the claimed "comparing the length of the defect with first and second times determined according to a recording speed of the optical disc." Instead, the Office Action relies upon Kishimoto. In establishing motivation, the Office Action uses a three-step reasoning. First, the Office Action alleges that Kishimoto discloses that an optical disc may have a plurality of different speeds, and then alleges that it would have been obvious to modify Takasago/Kamiyama/Nakane to record at different speeds. Finally, the Office Action concludes by saying "the motivation would have been to record at a higher and/or more appropriate speed." Office Action, page 5, lines 1-16.

It is emphasized that the Office Action relies upon Kishimoto as teaching the use of

variable speeds. Thus, the addition of the Kishimoto reference modifies Takasago/Kamiyama/Nakane from fixed speed to variable speed. However, the purported motivation (higher and/or more appropriate speed) could have been achieved without the use of *variable* speeds. A higher speed would not have to have been a variable speed. Instead, the higher speed could have been a *fixed* higher speed. Similarly, this "more appropriate speed" could have also been a *fixed* speed.

The Response to Arguments portion of the Office Action states "the most appropriate speed is not necessarily the highest one." However, Applicants respectfully note that a variable speed device would not have been necessary to achieve the most appropriate speed. Instead, the fixed speed may also have been the most appropriate speed for the circumstances.

Independent claims 8 and 16 recite features somewhat similar to those discussed with respect to claim 1. Accordingly, claim 8 is patentable over the cited references at least for similar reasons as discussed with respect to claim 1.

Dependent claims 2-4, 9-10 and 18-19 respectively depend from claims 1, 8 and 16 and are patentable over the cited references at least due to their dependency.

C. Independent claim 5 and dependent claims 6-7

1. First claim feature

First, it is noted that independent claim 5 recites the classifying comprising comparing the length of the defective region with first and second times determined according to a specification of the servo unit. The Office Action of October 30, 2008 (hereinafter "Office Action") indicates that the primary reference (Takasago) and secondary references (Kamiyama/Nakane) do not teach these features. Instead, the Office Action relies on Kishimoto. Specifically, the Office Action (page 5, lines 1-2) states "Kishimoto discloses that an optical disc apparatus may have a plurality of different speeds."

However, a plurality of different speeds is not the same as the claimed feature, which is the classifying comprising comparing the length of the defective region with first and second times determined according to a specification of the servo unit. Thus, even assuming, *arguendo*, that Kishimoto does teach a plurality of different speeds, Kishimoto still does not overcome the deficiencies in the remaining references. While Kishimoto may teach different speeds, the Office Action does not allege that Kishimoto teaches how to classify the defective region according to length.

2. Second claim feature

Second, independent claim 5 recites classifying the defective region into a first category in which the data is recordable in the defective region and into a second category in which the data is not reproducible from the defective region even though the data is recordable therein, according to the length of the defective region. In contrast, the defect is classified according to the duration of the off-track signal in Takasago. Takasago, col. 3, ln. 30-31. A factor in this distinction is that Takasago is directed to detecting an external disturbance causing the off-track. Takasago, col. 3, ln. 4-6. In contrast, the present invention may be used to detect dirt, dust, scratches or disk manufacturing errors causing off track. Present paragraph 18. Takasago cannot classify errors caused by these factors. If time T_1 of Takasago is not exceeded, normal recording/reproducing is determined. Because the duration T_1 is determined so that an external disturbance may be detected, this time is too long to detect errors caused by dirt and dust.

3. Combination of References

Finally, it is respectfully submitted that the combination of references is not proper, at least for similar reasons as discussed in section VII(B)(3) above.

Dependent claims 6-7 respectively depend from claim 5 and are patentable over the cited references at least due to their dependency.

D. Independent claims 12-13 and dependent claim 15

1. First claim feature

First, it is noted that independent claim 12 recites the classifying comprising comparing the length of the defective region with first and second times determined according to a recording speed of the optical disc. It is respectfully submitted that cited references do not teach or suggest these features, at least for similar reasons as discussed in section VII(B)(1) above.

2. Second claim feature

Second, independent claim 12 recites classifying the defective region into a first and category in which the data is recordable in the defective region and a second category in which the data is not reproducible from the defective region even though the data is recordable therein, according to a length of the defective region. It is respectfully submitted that cited references do not teach or suggest these features, at least for similar reasons as discussed in section VII(C)(2) above.

3. Combination of References

Finally, it is respectfully submitted that the combination of references is not proper, at

least for similar reasons as discussed in section VII(B)(3) above.

Independent claim 13 recites features somewhat similar to those discussed with respect to claim 12. Accordingly, claim 13 is patentable over the cited references at least for similar reasons as discussed with respect to claim 12.

Dependent claim 15 depends from claim 13 and is patentable over the cited references at least due to its dependency.

D. Summary

In view of the foregoing remarks, Appellants submit that pending appealed claims 1-21 are patentable over the relied upon prior art. Reversal of the Examiner's rejection is respectfully requested.

Respectfully submitted,

STAAS & HALSEY LLP

Date: 9-30-09

By: _____

Michael J. Badagliacca
Registration No. 39,099

1201 New York Avenue, N.W., 7th Floor
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501

VIII. CLAIMS APPENDIX

1. (PREVIOUSLEY PRESENTED) A method of controlling a recording operation of an optical disc recording apparatus which records data to a recordable optical disc having a defect, the method comprising:

based on a length of the defect, classifying the defect into a first category indicating that the data is normally recordable and a second category indicating that the data is not normally reproducible even though the data is normally recordable;

detecting the defect while recording the data to the recordable optical disc;

if the defect is detected, continuing recording of the data in the recordable disc while controlling a servo unit to hold a servo tracking by using a previous servo control value which is used before the defect occurs;

determining the length of the defect and a type of the defect based on the length of the defect; and

as a result of the determining, if the defect corresponds to the first category, assuming that the data is normally recorded in a defect region and continuing recording of the data, or if the defect corresponds to the second category, further recording of the data recorded in the defect region in another region without a read-after-write operation,

the classifying comprising comparing the length of the defect with first and second times determined according to a recording speed of the optical disc.

2. (ORIGINAL) The method of claim 1, further comprising:

classifying the defect into a third category indicating that the data cannot be normally recorded and the defect causes a servo error;

as a result of the determining, if the defect corresponds to the third category, stopping the recording operation.

3. (ORIGINAL) The method of claim 1, wherein the recordable optical disc is a recordable compact disc.

4. (ORIGINAL) The method of claim 1, wherein the recordable optical disc is a recordable digital video disc.

5. (PREVIOUSLEY PRESENTED) A method of controlling a recording operation of an optical disc recording apparatus which records data to a recordable optical disc having a

defective region, comprising:

detecting the defective region of the recordable optical disc;

determining a length of the defective region, while recording the data to the recordable optical disc;

controlling a servo unit based on a value of a servo control just prior to a detection of the defective region if recording the data to the defective region;

classifying the defective region into a first category in which the data is recordable in the defective region and into a second category in which the data is not reproducible from the defective region even though the data is recordable therein, according to the length of the defective region; and

if a classified result is in the first category, recording the data in the defective region or if the classified result is in the second category, recording the data in a second region of the optical recordable disc without a read-after-write operation,

the classifying comprising comparing the length of the defective region with first and second times determined according to a specification of the servo unit.

6. (ORIGINAL) The method of claim 5, further comprising:

classifying the defective region into a third category in which the data cannot be recorded; and

if the classified result is in the third category, stopping the recording operation.

7. (ORIGINAL) The method of claim 5, wherein the recordable optical disc is one of a recordable compact disc and a recordable digital video disc.

8. (PREVIOUSLEY PRESENTED) An optical disc recording apparatus which records data to a recordable optical disc having a defect, comprising:

an optical pickup generating a reproduction signal;

one or more servos to move the optical pickup;

a processing unit to detect a servo error signal from the reproduction signal and to control the one or more servos according to the reproduction signal;

a defect detection unit to detect a defect on the optical disc and to generate a defect detection signal when the defect is detected; and

a defect type determination unit to determine, without a read-after-write operation, a type of the defect with reference to the defect detection signal provided from the defect detection unit

based on a length of a defective region of the defect,

wherein the type of the defect is determined by the defect type determination unit based on whether the data is recordable in the defective region or the data is not reproducible from the defective region even though the data is recordable therein,

the defect type determination unit determining the type of the defective region by comparing the length of the defective region with first and second times determined according to a recording speed of the optical disc.

9. (CANCELLED)

10. (PREVIOUSLY PRESENTED) The apparatus of claim 8, wherein the type of the defect is further determined by the defect type determination unit based on whether the data cannot be recorded in the defective region.

11. (ORIGINAL) The apparatus of claim 10, wherein the recordable optical disc is one of a recordable compact disc and a recordable digital video disc.

12. (PREVIOUSLEY PRESENTED) A computer readable medium embodying a program executed by a processor to record data to a recordable optical disc having a defective region comprising:

detecting the defective region of the recordable optical disc;

determining a length of the defective region, while recording the data to the recordable optical disc;

controlling a servo unit based on a value of a servo control just prior to a detection of the defective region if recording the data to the defective region;

classifying the defective region into a first and category in which the data is recordable in the defective region and a second category in which the data is not reproducible from the defective region even though the data is recordable therein, according to a length of the defective region; and

if the classified result is in the first category, recording the data in the defective region or if the classified result is in the second category, recording the data in a second region of the optical recordable disc without a read-after-write operation,

the classifying comprising comparing the length of the defective region with first and second times determined according to a recording speed of the optical disc.

13. (PREVIOUSLEY PRESENTED) A method of controlling a recording operation of an optical disc recording apparatus which records data to a recordable optical disc having a defective region, the method comprising:

detecting the defective region of the recordable optical disc;

determining a length of the defective region, while recording the data to the recordable optical disc;

controlling a servo unit based on a value of a servo control just prior to a detection of the defective region, if recording the data to the defective region;

classifying the defective region into a first category , if the length of the defective region is less than a first reference length and into a second category, if the length of the defective region is between the first reference length and a second reference length; and

if a classified result is in the first category, recording the data in the defective region or if the classified result is in the second category, recording the data in a second region of the optical recordable disc without a read-after-write operation,

wherein the first reference length is a maximum length of the defective region where a servo status is stable and data is readable without any additional operation of the optical disc recording apparatus after data is recorded,

the classifying comprising comparing the length of the defective region with first and second times determined according to a recording speed of the optical disc.

14. (CANCELLED)

15. (ORIGINAL) The method of claim 13, wherein the second reference length is a maximum length of the defective region where a servo status is stable, but errors occur when the data is read after being recorded.

16. (PREVIOUSLY PRESENTED) An optical disc recording apparatus which records data to a recordable optical disc having a defect, comprising:

an optical pickup generating a reproduction signal;

one or more servos to move the optical pickup;

a processing unit to detect a servo error signal from the reproduction signal and to control the one or more servos according to the reproduction signal;

a defect detection unit to detect a defect on the optical disc and to generate a defect

detection signal when the defect is detected; and

a defect type determination unit to determine a type of the defect with reference to the defect detection signal provided from the defect detection unit based on whether a length of the defective region is greater than a reference length,

wherein the reference length is a maximum length of the defective region where a servo status is stable and data is readable without any additional operation of the optical disc recording apparatus after data is recorded, and if the defective region is longer than the reference length, recording the data in another region of the recordable optical disc without a read-after-write operation,

the classifying comprising comparing the length of the defective region with first and second times determined according to a recording speed of the optical disc.

17. (CANCELLED)

18. (ORIGINAL) The apparatus of claim 16, wherein the defect type determination unit further determines whether the defective region is greater than a second reference length, and stops the recording of the data if the defective region is determined to be greater than the second reference length.

19. (ORIGINAL) The apparatus of claim 18, wherein the second reference length is a maximum length of the defective region where a servo status is stable, but errors occur when the data is read after being recorded.

IX. EVIDENCE APPENDIX

None

X. RELATED PROCEEDING APPENDIX

None